C L A I M S

1. A moving picture encoding method characterized by comprising at least the steps of:

obtaining a temporally hierarchized signal by temporally hierarchically dividing a moving picture signal;

obtaining a temporally hierarchized spatial high-frequency signal by performing a high frequency generation process on the temporally hierarchized signal in spatial hierarchical division;

obtaining a reduced image signal by performing a low frequency generation process on the moving picture signal in spatial hierarchical division; and

obtaining a reduced temporally hierarchized signal by temporally hierarchizing the reduced image signal.

2. A moving picture encoding method according to claim 1, characterized in that the temporally hierarchized spatial high-frequency signal and reduced temporally hierarchized signal are encoded.

3. A moving picture encoding method characterized by comprising at least the steps of:

obtaining a prediction error signal by performing interframe prediction on a moving picture signal;

obtaining a prediction error spatial high-frequency signal by performing a high frequency

generation process on the prediction error signal in spatial hierarchical division;

obtaining a reduced image signal by performing a low-frequency signal generation process on the moving picture signal in spatial hierarchical division; and

obtaining a reduced interframe prediction error signal as a prediction error signal by performing interframe prediction on the reduced image signal.

4. A moving picture encoding method according to claim 3, characterized in that the prediction error spatial high-frequency signal and reduced interframe prediction error signal are encoded.

5. A moving picture encoding method of performing a three-dimensional subband dividing process which performs motion compensation prediction on a moving picture signal and also subband divides the moving picture signal in a spatial direction, characterized in that the three-dimensional subband dividing process comprises at least:

the motion detection step of obtaining motion information by detecting an interframe motion of the moving picture signal;

the motion compensation prediction step of obtaining a prediction error signal by performing motion compensation prediction on the moving picture signal in accordance with the motion information;

the prediction error signal spatial division

step of generating a spatial low-frequency prediction error subband signal and spatial high-frequency prediction error subband signal by spatially subband dividing the prediction error signal; and

the band signal spatial division step of generating a spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal by spatially subband dividing the moving picture signal.

6. A moving picture encoding method according to claim 5, characterized in that the motion compensation prediction step, prediction error signal spatial division step, and band signal spatial division step are performed on the moving picture signal, and the motion compensation prediction step, prediction error signal spatial division step, and band signal spatial division step are recurrently repeated by replacing the spatial low-frequency intra-subband signal obtained after the band signal spatial division step with the moving picture signal.

7. A moving picture encoding method of performing a three-dimensional subband dividing process which performs motion compensation prediction on a moving picture signal and also subband divides the moving picture signal in a spatial direction, characterized in that the three-dimensional subband dividing process comprises at least:

the motion detection step of obtaining motion

information by detecting an interframe motion of the moving picture signal;

the motion compensation prediction step of obtaining a prediction error signal by performing motion compensation prediction, in accordance with the motion information, on a spatial low-frequency subband signal which is obtained by spatially subband dividing the moving picture signal;

the prediction error signal spatial division step of generating a spatial low-frequency prediction error subband signal and spatial high-frequency prediction error subband signal by spatially subband dividing the prediction error signal; and

the band signal spatial division step of generating a spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal by spatially subband dividing the spatial low-frequency subband signal.

8. A moving picture encoding method according to claim 7, characterized in that the motion compensation prediction step, prediction error signal spatial division step, and band signal spatial division step are performed on the moving picture signal, and the motion compensation prediction step, prediction error signal spatial division step, and band signal spatial division step are recurrently repeated by replacing the spatial low-frequency intra-subband signal obtained

after the band signal spatial division step with the spatial low-frequency subband signal.

9. A moving picture encoding method of performing a three-dimensional subband dividing process which subband divides a moving picture signal in both a temporal direction and spatial direction, characterized in that the three-dimensional subband dividing process comprises at least:

the motion detection step of obtaining motion information by detecting an interframe motion of the moving picture signal;

the temporal subband division step of obtaining a temporal low-frequency subband signal and temporal high-frequency subband signal by motion compensating the moving picture signal in accordance with the motion information, and temporally subband dividing the motion compensated moving picture signal;

the temporal high-frequency subband spatial division step of generating a temporal high-frequency/spatial low-frequency subband signal and temporal high-frequency/spatial high-frequency subband signal by spatially subband dividing the temporal high-frequency subband signal;

the temporal low-frequency subband spatial division step of generating a temporal low-frequency/spatial low-frequency subband signal and temporal low-frequency/spatial high-frequency subband

signal by spatially subband dividing the temporal low-frequency subband signal; and

the band signal spatial division step of generating a spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal by spatially subband dividing the moving picture signal.

10. A moving picture encoding method according to claim 9, characterized in that the temporal subband division step, temporal high-frequency subband spatial division step, temporal low-frequency subband spatial division step, and band signal spatial division step are performed on the moving picture signal, and the temporal subband division step, temporal high-frequency subband spatial division step, temporal low-frequency subband spatial division step, and band signal spatial division step are recurrently repeated by replacing the spatial low-frequency intra-subband signal obtained after the band signal spatial division step with the moving picture signal.

11. A moving picture encoding method of performing a three-dimensional subband dividing process which subband divides a moving picture signal in both a temporal direction and spatial direction, characterized in that the three-dimensional subband dividing process comprises at least:

the motion detection step of obtaining motion information by detecting an interframe motion of the

moving picture signal;

the temporal subband division step of obtaining a temporal low-frequency subband signal and temporal high-frequency subband signal by motion compensating, in accordance with the motion information, a spatial low-frequency subband signal obtained by spatially subband dividing the moving picture signal, and temporally subband dividing the motion compensated spatial low-frequency subband signal;

the temporal high-frequency subband spatial division step of generating a temporal high-frequency/spatial low-frequency subband signal and temporal high-frequency/spatial high-frequency subband signal by spatially subband dividing the temporal high-frequency subband signal;

the temporal low-frequency subband spatial division step of generating a temporal low-frequency/spatial low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal by spatially subband dividing the temporal low-frequency subband signal; and

the band signal spatial division step of generating a spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal by spatially subband dividing the spatial low-frequency subband signal.

12. A moving picture encoding method

according to claim 11, characterized in that the temporal subband division step, temporal high-frequency subband spatial division step, temporal low-frequency subband spatial division step, and band signal spatial division step are performed on the moving picture signal, and the temporal subband division step, temporal high-frequency subband spatial division step, temporal low-frequency subband spatial division step, and band signal spatial division step are recurrently repeated by replacing the spatial low-frequency intra-subband signal obtained after the band signal spatial division step with the spatial low-frequency subband signal.

13. A moving picture decoding method characterized by comprising the steps of:

generating a temporal high-frequency/spatial low-frequency signal by referring to a temporal high-frequency signal, temporal low-frequency signal, and temporal low-frequency/spatial high-frequency signal;

generating a second temporal low-frequency signal by referring to the temporal low-frequency signal and temporal low-frequency/spatial high-frequency signal;

generating a second temporal high-frequency signal by using the temporal high-frequency/spatial low-frequency signal and a temporal high-frequency/spatial high-frequency signal; and

combining the second temporal low-frequency signal and second temporal high-frequency signal.

14. A moving picture decoding method characterized by comprising:

the first step of generating a spatial low-frequency prediction error subband signal by referring to a prediction error signal, spatial low-frequency intra-subband signal, and spatial high-frequency intra-subband signal;

the second step of obtaining a second prediction error signal by spatially subband combining the spatial low-frequency prediction error subband signal and spatial high-frequency prediction error subband signal;

the third step of obtaining an intra-band signal by spatially subband combining the spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal; and

the fourth step of combining the intra-band signal and second prediction error signal.

15. A moving picture decoding method according to claim 14, characterized in that the first step, the second step, and the third step are recurrently repeated by replacing the second prediction error signal with the prediction error signal, and the intra-band signal with the spatial low-frequency intra-subband signal.

16. A moving picture decoding method characterized by comprising:

the first step of generating a spatial low-frequency prediction error subband signal by referring to a prediction error signal, spatial low-frequency intra-subband signal, and spatial high-frequency intra-subband signal;

the second step of obtaining a second prediction error signal by spatially subband combining the spatial low-frequency prediction error subband signal and spatial high-frequency prediction error subband signal;

the third step of obtaining an intra-band signal by spatially subband combining the spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal; and

the fourth step of adding the second prediction error signal to the intra-band signal by motion compensation prediction.

17. A moving picture decoding method according to claim 16, characterized in that the first step, the second step, and the third step are recurrently repeated by replacing the second prediction error signal with the prediction error signal, and the intra-band signal with the spatial low-frequency intra-subband signal.

18. A moving picture decoding method

characterized by comprising:

the first step of generating a spatial low-frequency prediction error subband signal by referring to at least one or a combination of a spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal, and a prediction error signal;

the second step of obtaining a second prediction error signal by spatially subband combining the spatial low-frequency prediction error subband signal and spatial high-frequency prediction error subband signal;

the third step of obtaining an intra-band signal by spatially subband combining the spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal; and

the fourth step of combining the intra-band signal and second prediction error signal.

19. A moving picture decoding method according to claim 18, characterized in that the first step, the second step, and the third step are recurrently repeated by replacing the second prediction error signal with the prediction error signal, and the intra-band signal with the spatial low-frequency intra-subband signal.

20. A moving picture decoding method characterized by comprising:

the first step of generating a temporal high-frequency/spatial low-frequency subband signal by referring to a temporal high-frequency subband signal, temporal low-frequency subband signal, and temporal low-frequency/spatial high-frequency subband signal;

the second step of obtaining a second temporal high-frequency subband signal by spatially subband combining the temporal high-frequency/spatial low-frequency subband signal and a temporal high-frequency/spatial high-frequency subband signal;

the third step of obtaining a second temporal low-frequency subband signal by spatially subband combining the temporal low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal; and

the fourth step of combining the second temporal low-frequency subband signal and second temporal high-frequency subband signal.

21. A moving picture decoding method according to claim 20, characterized in that the first step, the second step, and the third step are recurrently repeated by replacing the second temporal high-frequency subband signal with the temporal high-frequency subband signal, and the second temporal low-frequency subband signal with the temporal low-frequency subband signal.

22. A moving picture decoding method

characterized by comprising:

the first step of generating a temporal high-frequency/spatial low-frequency subband signal by referring to at least one or a combination of a temporal low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal, and a temporal high-frequency subband signal;

the second step of obtaining a second temporal high-frequency subband signal by spatially subband combining the temporal high-frequency/spatial low-frequency subband signal and a temporal high-frequency/spatial high-frequency subband signal;

the third step of obtaining a second temporal low-frequency subband signal by spatially subband combining the temporal low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal; and

the fourth step of combining the second temporal low-frequency subband signal and second temporal high-frequency subband signal.

23. A moving picture decoding method according to claim 22, characterized in that the first step, the second step, and the third step are recurrently repeated by replacing the second temporal high-frequency subband signal with the temporal high-frequency subband signal, and the second temporal low-frequency subband signal with the temporal

low-frequency subband signal.

24. A moving picture decoding method characterized by comprising:

the first step of generating a temporal low-frequency/spatial low-frequency subband signal by referring to a spatial low-frequency intra-subband signal and temporal high-frequency/spatial high-frequency subband signal;

the second step of generating a temporal high-frequency/spatial low-frequency subband signal by referring to a temporal high-frequency subband signal, the temporal low-frequency/spatial low-frequency subband signal, and a temporal low-frequency/spatial high-frequency subband signal;

the third step of obtaining a second temporal high-frequency subband signal by spatially subband combining the temporal high-frequency/spatial low-frequency subband signal and temporal high-frequency/spatial high-frequency subband signal;

the fourth step of obtaining a second temporal low-frequency subband signal by spatially subband combining the temporal low-frequency/spatial low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal; and

the fifth step of combining the second temporal low-frequency subband signal and second temporal high-frequency subband signal.

25. A moving picture decoding method according to claim 24, characterized in that the first step, the second step, the third step, and the fourth step are recurrently repeated by replacing the second temporal high-frequency subband signal with the temporal high-frequency subband signal, and the second temporal low-frequency subband signal with the spatial low-frequency intra-subband signal.

26. A moving picture decoding method characterized by comprising:

the first step of generating a temporal low-frequency/spatial low-frequency subband signal by referring to a spatial low-frequency intra-subband signal and temporal high-frequency/spatial high-frequency subband signal;

the second step of generating a temporal high-frequency/spatial low-frequency subband signal by referring to at least one or a combination of the temporal low-frequency/spatial low-frequency subband signal and a temporal low-frequency/spatial high-frequency subband signal, and a temporal high-frequency subband signal;

the third step of obtaining a second temporal high-frequency subband signal by spatially subband combining the temporal high-frequency/spatial low-frequency subband signal and temporal high-frequency/spatial high-frequency subband signal;

the fourth step of obtaining a second temporal low-frequency subband signal by spatially subband combining the temporal low-frequency/spatial low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal; and

the fifth step of combining the second temporal low-frequency subband signal and second temporal high-frequency subband signal.

27. A moving picture decoding method according to claim 26, characterized in that the first step, the second step, the third step, and the fourth step are recurrently repeated by replacing the second temporal high-frequency subband signal with the temporal high-frequency subband signal, and the second temporal low-frequency subband signal with the spatial low-frequency intra-subband signal.

28. A moving picture encoding method characterized by comprising the steps of:

obtaining a time filtering signal by filtering a moving picture signal in a temporal direction;

obtaining a time filtering lower hierarchy signal and time filtering upper hierarchy signal by spatially hierarchically dividing the time filtering signal;

obtaining an upper hierarchy moving picture signal by spatially hierarchically dividing the moving picture signal;

obtaining an upper hierarchy time filtering signal by filtering the upper hierarchy moving picture signal in the temporal direction; and

encoding the time filtering lower hierarchy signal and upper hierarchy time filtering signal.

29. A moving picture encoding method according to claim 28, characterized by further comprising the step of replacing the time filtering upper hierarchy signal with the upper hierarchy time filtering signal.

30. A moving picture decoding method characterized by comprising the steps of:

decoding a time filtering lower hierarchy signal and upper hierarchy time filtering signal;

obtaining a time filtering upper hierarchy signal by filtering the upper hierarchy time filtering signal in a temporal direction;

obtaining a time filtering signal by spatially hierarchically combining the time filtering lower hierarchy signal and time filtering upper hierarchy signal; and

obtaining a moving picture signal by filtering the time filtering signal in the temporal direction.

31. A moving picture decoding method according to claim 30, characterized by further comprising the step of correcting, by referring to a signal of a frame different from a frame of the time

filtering upper hierarchy signal, the time filtering upper hierarchy signal to a time filtering upper hierarchy signal which belongs to an upper hierarchy obtained by hierarchical division after temporal-direction filtering is performed at a decoding resolution.

32. A moving picture encoding program characterized by executing at least the steps of:

obtaining a temporally hierarchized signal by temporally hierarchically dividing a moving picture signal;

obtaining a temporally hierarchized spatial high-frequency signal by performing a high frequency generation process on the temporally hierarchized signal in spatial hierarchical division;

obtaining a reduced image signal by performing a low frequency generation process on the moving picture signal in spatial hierarchical division; and

obtaining a reduced temporally hierarchized signal by temporally hierarchizing the reduced image signal.

33. A moving picture encoding program according to claim 32, characterized in that the temporally hierarchized spatial high-frequency signal and reduced temporally hierarchized signal are encoded.

34. A moving picture encoding program characterized by executing at least the steps of:

obtaining a prediction error signal by performing interframe prediction on a moving picture signal;

obtaining a prediction error spatial high-frequency signal by performing a high frequency generation process on the prediction error signal in spatial hierarchical division;

obtaining a reduced image signal by performing a low-frequency signal generation process on the moving picture signal in spatial hierarchical division; and

obtaining a reduced interframe prediction error signal as a prediction error signal by performing interframe prediction on the reduced image signal.

35. A moving picture encoding program according to claim 34, characterized in that the prediction error spatial high-frequency signal and reduced interframe prediction error signal are encoded.

36. A moving picture encoding program of performing a three-dimensional subband dividing process which performs motion compensation prediction on a moving picture signal and also subband divides the moving picture signal in a spatial direction, characterized in that the three-dimensional subband dividing process executes at least:

the motion detection step of obtaining motion information by detecting an interframe motion of the moving picture signal;

the motion compensation prediction step of obtaining a prediction error signal by performing motion compensation prediction on the moving picture signal in accordance with the motion information;

the prediction error signal spatial division step of generating a spatial low-frequency prediction error subband signal and spatial high-frequency prediction error subband signal by spatially subband dividing the prediction error signal; and

the band signal spatial division step of generating a spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal by spatially subband dividing the moving picture signal.

37. A moving picture encoding program according to claim 36, characterized in that the motion compensation prediction step, prediction error signal spatial division step, and band signal spatial division step are performed on the moving picture signal, and the motion compensation prediction step, prediction error signal spatial division step, and band signal spatial division step are recurrently repeated by replacing the spatial low-frequency intra-subband signal obtained after the band signal spatial division step with the moving picture signal.

38. A moving picture encoding program of performing a three-dimensional subband dividing process which performs motion compensation prediction on a

moving picture signal and also subband divides the moving picture signal in a spatial direction, characterized in that the three-dimensional subband dividing process executes at least:

the motion detection step of obtaining motion information by detecting an interframe motion of the moving picture signal;

the motion compensation prediction step of obtaining a prediction error signal by performing motion compensation prediction, in accordance with the motion information, on a spatial low-frequency subband signal which is obtained by spatially subband dividing the moving picture signal;

the prediction error signal spatial division step of generating a spatial low-frequency prediction error subband signal and spatial high-frequency prediction error subband signal by spatially subband dividing the prediction error signal; and

the band signal spatial division step of generating a spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal by spatially subband dividing the spatial low-frequency subband signal.

39. A moving picture encoding program according to claim 38, characterized in that the motion compensation prediction step, prediction error signal spatial division step, and band signal spatial division

step are performed on the moving picture signal, and the motion compensation prediction step, prediction error signal spatial division step, and band signal spatial division step are recurrently repeated by replacing the spatial low-frequency intra-subband signal obtained after the band signal spatial division step with the spatial low-frequency subband signal.

40. A moving picture encoding program of performing a three-dimensional subband dividing process which subband divides a moving picture signal in both a temporal direction and spatial direction, characterized in that the three-dimensional subband dividing process executes at least:

the motion detection step of obtaining motion information by detecting an interframe motion of the moving picture signal;

the temporal subband division step of obtaining a temporal low-frequency subband signal and temporal high-frequency subband signal by motion compensating the moving picture signal in accordance with the motion information, and temporally subband dividing the motion compensated moving picture signal;

the temporal high-frequency subband spatial division step of generating a temporal high-frequency/spatial low-frequency subband signal and temporal high-frequency/spatial high-frequency subband signal by spatially subband dividing the temporal

high-frequency subband signal;

the temporal low-frequency subband spatial division step of generating a temporal low-frequency/spatial low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal by spatially subband dividing the temporal low-frequency subband signal; and

the band signal spatial division step of generating a spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal by spatially subband dividing the moving picture signal.

41. A moving picture encoding program according to claim 40, characterized in that the temporal subband division step, temporal high-frequency subband spatial division step, temporal low-frequency subband spatial division step, and band signal spatial division step are performed on the moving picture signal, and the temporal subband division step, temporal high-frequency subband spatial division step, temporal low-frequency subband spatial division step, and band signal spatial division step are recurrently repeated by replacing the spatial low-frequency intra-subband signal obtained after the band signal spatial division step with the moving picture signal.

42. A moving picture encoding program of performing a three-dimensional subband dividing process which subband divides a moving picture signal in both a

temporal direction and spatial direction, characterized in that the three-dimensional subband dividing process executes at least:

the motion detection step of obtaining motion information by detecting an interframe motion of the moving picture signal;

the temporal subband division step of obtaining a temporal low-frequency subband signal and temporal high-frequency subband signal by motion compensating, in accordance with the motion information, a spatial low-frequency subband signal obtained by spatially subband dividing the moving picture signal, and temporally subband dividing the motion compensated spatial low-frequency subband signal;

the temporal high-frequency subband spatial division step of generating a temporal high-frequency/spatial low-frequency subband signal and temporal high-frequency/spatial high-frequency subband signal by spatially subband dividing the temporal high-frequency subband signal;

the temporal low-frequency subband spatial division step of generating a temporal low-frequency/spatial low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal by spatially subband dividing the temporal low-frequency subband signal; and

the band signal spatial division step of

generating a spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal by spatially subband dividing the spatial low-frequency subband signal.

43. A moving picture encoding program according to claim 42, characterized in that the temporal subband division step, temporal high-frequency subband spatial division step, temporal low-frequency subband spatial division step, and band signal spatial division step are performed on the moving picture signal, and the temporal subband division step, temporal high-frequency subband spatial division step, temporal low-frequency subband spatial division step, and band signal spatial division step are recurrently repeated by replacing the spatial low-frequency intra-subband signal obtained after the band signal spatial division step with the spatial low-frequency subband signal.

44. A moving picture decoding program characterized by executing at least the steps of:

generating a temporal high-frequency/spatial low-frequency signal by referring to a temporal high-frequency signal, temporal low-frequency signal, and temporal low-frequency/spatial high-frequency signal;

generating a second temporal low-frequency signal by referring to the temporal low-frequency signal and temporal low-frequency/spatial high-frequency

signal;

generating a second temporal high-frequency signal by using the temporal high-frequency/spatial low-frequency signal and a temporal high-frequency/spatial high-frequency signal; and

combining the second temporal low-frequency signal and second temporal high-frequency signal.

45. A moving picture decoding program characterized by executing at least:

the first step of generating a spatial low-frequency prediction error subband signal by referring to a prediction error signal, spatial low-frequency intra-subband signal, and spatial high-frequency intra-subband signal;

the second step of obtaining a second prediction error signal by spatially subband combining the spatial low-frequency prediction error subband signal and spatial high-frequency prediction error subband signal;

the third step of obtaining an intra-band signal by spatially subband combining the spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal; and

the fourth step of combining the intra-band signal and second prediction error signal.

46. A moving picture decoding program according to claim 45, characterized in that the first

step, the second step, and the third step are recurrently repeated by replacing the second prediction error signal with the prediction error signal, and the intra-band signal with the spatial low-frequency intra-subband signal.

47. A moving picture decoding program characterized by executing at least:

the first step of generating a spatial low-frequency prediction error subband signal by referring to a prediction error signal, spatial low-frequency intra-subband signal, and spatial high-frequency intra-subband signal;

the second step of obtaining a second prediction error signal by spatially subband combining the spatial low-frequency prediction error subband signal and spatial high-frequency prediction error subband signal;

the third step of obtaining an intra-band signal by spatially subband combining the spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal; and

the fourth step of adding the second prediction error signal to the intra-band signal by motion compensation prediction.

48. A moving picture decoding program according to claim 47, characterized in that the first step, the second step, and the third step are

recurrently repeated by replacing the second prediction error signal with the prediction error signal, and the intra-band signal with the spatial low-frequency intra-subband signal.

49. A moving picture decoding program characterized by executing at least:

the first step of generating a spatial low-frequency prediction error subband signal by referring to at least one or a combination of a spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal, and a prediction error signal;

the second step of obtaining a second prediction error signal by spatially subband combining the spatial low-frequency prediction error subband signal and spatial high-frequency prediction error subband signal;

the third step of obtaining an intra-band signal by spatially subband combining the spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal; and

the fourth step of combining the intra-band signal and second prediction error signal.

50. A moving picture decoding program according to claim 49, characterized in that the first step, the second step, and the third step are recurrently repeated by replacing the second prediction

error signal with the prediction error signal, and the intra-band signal with the spatial low-frequency intra-subband signal.

51. A moving picture decoding program characterized by executing at least:

the first step of generating a temporal high-frequency/spatial low-frequency subband signal by referring to a temporal high-frequency subband signal, temporal low-frequency subband signal, and temporal low-frequency/spatial high-frequency subband signal;

the second step of obtaining a second temporal high-frequency subband signal by spatially subband combining the temporal high-frequency/spatial low-frequency subband signal and a temporal high-frequency/spatial high-frequency subband signal;

the third step of obtaining a second temporal low-frequency subband signal by spatially subband combining the temporal low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal; and

the fourth step of combining the second temporal low-frequency subband signal and second temporal high-frequency subband signal.

52. A moving picture decoding program according to claim 51, characterized in that the first step, the second step, and the third step are recurrently repeated by replacing the second temporal

high-frequency subband signal with the temporal high-frequency subband signal, and the second temporal low-frequency subband signal with the temporal low-frequency subband signal.

53. A moving picture decoding program characterized by executing at least:

the first step of generating a temporal high-frequency/spatial low-frequency subband signal by referring to at least one or a combination of a temporal low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal, and a temporal high-frequency subband signal;

the second step of obtaining a second temporal high-frequency subband signal by spatially subband combining the temporal high-frequency/spatial low-frequency subband signal and a temporal high-frequency/spatial high-frequency subband signal;

the third step of obtaining a second temporal low-frequency subband signal by spatially subband combining the temporal low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal; and

the fourth step of combining the second temporal low-frequency subband signal and second temporal high-frequency subband signal.

54. A moving picture decoding program according to claim 53, characterized in that the first

step, the second step, and the third step are recurrently repeated by replacing the second temporal high-frequency subband signal with the temporal high-frequency subband signal, and the second temporal low-frequency subband signal with the temporal low-frequency subband signal.

55. A moving picture decoding program characterized by executing at least:

the first step of generating a temporal low-frequency/spatial low-frequency subband signal by referring to a spatial low-frequency intra-subband signal and temporal high-frequency/spatial high-frequency subband signal;

the second step of generating a temporal high-frequency/spatial low-frequency subband signal by referring to a temporal high-frequency subband signal, the temporal low-frequency/spatial low-frequency subband signal, and a temporal low-frequency/spatial high-frequency subband signal;

the third step of obtaining a second temporal high-frequency subband signal by spatially subband combining the temporal high-frequency/spatial low-frequency subband signal and temporal high-frequency/spatial high-frequency subband signal;

the fourth step of obtaining a second temporal low-frequency subband signal by spatially subband combining the temporal low-frequency/spatial

low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal; and

the fifth step of combining the second temporal low-frequency subband signal and second temporal high-frequency subband signal.

56. A moving picture decoding program according to claim 55, characterized in that the first step, the second step, the third step, and the fourth step are recurrently repeated by replacing the second temporal high-frequency subband signal with the temporal high-frequency subband signal, and the second temporal low-frequency subband signal with the spatial low-frequency intra-subband signal.

57. A moving picture decoding program characterized by executing at least:

the first step of generating a temporal low-frequency/spatial low-frequency subband signal by referring to a spatial low-frequency intra-subband signal and temporal high-frequency/spatial high-frequency subband signal;

the second step of generating a temporal high-frequency/spatial low-frequency subband signal by referring to at least one or a combination of the temporal low-frequency/spatial low-frequency subband signal and a temporal low-frequency/spatial high-frequency subband signal, and a temporal high-frequency subband signal;

the third step of obtaining a second temporal high-frequency subband signal by spatially subband combining the temporal high-frequency/spatial low-frequency subband signal and temporal high-frequency/spatial high-frequency subband signal;

the fourth step of obtaining a second temporal low-frequency subband signal by spatially subband combining the temporal low-frequency/spatial low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal; and

the fifth step of combining the second temporal low-frequency subband signal and second temporal high-frequency subband signal.

58. A moving picture decoding program according to claim 57, characterized in that the first step, the second step, the third step, and the fourth step are recurrently repeated by replacing the second temporal high-frequency subband signal with the temporal high-frequency subband signal, and the second temporal low-frequency subband signal with the spatial low-frequency intra-subband signal.

59. A moving picture encoding program characterized by comprising the steps of:

obtaining a time filtering signal by filtering a moving picture signal in a temporal direction;

obtaining a time filtering lower hierarchy signal and time filtering upper hierarchy signal by

spatially hierarchically dividing the time filtering signal;

obtaining an upper hierarchy moving picture signal by spatially hierarchically dividing the moving picture signal;

obtaining an upper hierarchy time filtering signal by filtering the upper hierarchy moving picture signal in the temporal direction; and

encoding the time filtering lower hierarchy signal and upper hierarchy time filtering signal.

60. A moving picture encoding method according to claim 59, characterized by further comprising the step of replacing the time filtering upper hierarchy signal with the upper hierarchy time filtering signal.

61. A moving picture decoding method characterized by comprising the steps of:

decoding a time filtering lower hierarchy signal and upper hierarchy time filtering signal;

obtaining a time filtering upper hierarchy signal by filtering the upper hierarchy time filtering signal in a temporal direction;

obtaining a time filtering signal by spatially hierarchically combining the time filtering lower hierarchy signal and time filtering upper hierarchy signal; and

obtaining a moving picture signal by filtering

the time filtering signal in the temporal direction.

62. A moving picture decoding method according to claim 61, characterized by further comprising the step of correcting, by referring to a signal of a frame different from a frame of the time filtering upper hierarchy signal, the time filtering upper hierarchy signal to a time filtering upper hierarchy signal which belongs to an upper hierarchy obtained by hierarchical division after temporal-direction filtering is performed at a decoding resolution.

63. A moving picture encoding device characterized by comprising at least:

means for obtaining a temporally hierarchized signal by temporally hierarchically dividing a moving picture signal;

means for obtaining a temporally hierarchized spatial high-frequency signal by performing a high frequency generation process on the temporally hierarchized signal in spatial hierarchical division;

means for obtaining a reduced image signal by performing a low frequency generation process on the moving picture signal in spatial hierarchical division; and

means for obtaining a reduced temporally hierarchized signal by temporally hierarchizing the reduced image signal.

64. A moving picture encoding device according to claim 63, characterized in that the temporally hierarchized spatial high-frequency signal and reduced temporally hierarchized signal are encoded.

65. A moving picture encoding device characterized by comprising at least:

means for obtaining a prediction error signal by performing interframe prediction on a moving picture signal;

means for obtaining a prediction error spatial high-frequency signal by performing a high frequency generation process on the prediction error signal in spatial hierarchical division;

means for obtaining a reduced image signal by performing a low-frequency signal generation process on the moving picture signal in spatial hierarchical division; and

means for obtaining a reduced interframe prediction error signal as a prediction error signal by performing interframe prediction on the reduced image signal.

66. A moving picture encoding device according to claim 65, characterized in that the prediction error spatial high-frequency signal and reduced interframe prediction error signal are encoded.

67. A moving picture encoding device for performing a three-dimensional subband dividing process

which performs motion compensation prediction on a moving picture signal and also subband divides the moving picture signal in a spatial direction, characterized in that the three-dimensional subband dividing process comprises at least:

motion detecting means for obtaining motion information by detecting an interframe motion of the moving picture signal;

motion compensation predicting means for obtaining a prediction error signal by performing motion compensation prediction on the moving picture signal in accordance with the motion information;

prediction error signal spatial dividing means for generating a spatial low-frequency prediction error subband signal and spatial high-frequency prediction error subband signal by spatially subband dividing the prediction error signal; and

band signal spatial dividing means for generating a spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal by spatially subband dividing the moving picture signal.

68. A moving picture encoding device according to claim 67, characterized in that said motion compensation predicting means, prediction error signal spatial dividing means, and band signal spatial dividing means are performed on the moving picture signal, and the processes of said motion compensation predicting

means, prediction error signal spatial dividing means, and band signal spatial dividing means are recurrently repeated by replacing the spatial low-frequency intra-subband signal obtained after said band signal spatial dividing means with the moving picture signal.

69. A moving picture encoding device for performing a three-dimensional subband dividing process which performs motion compensation prediction on a moving picture signal and also subband divides the moving picture signal in a spatial direction, characterized in that the three-dimensional subband dividing process comprises at least:

motion detecting means for obtaining motion information by detecting an interframe motion of the moving picture signal;

motion compensation predicting means for obtaining a prediction error signal by performing motion compensation prediction, in accordance with the motion information, on a spatial low-frequency subband signal which is obtained by spatially subband dividing the moving picture signal;

prediction error signal spatial dividing means for generating a spatial low-frequency prediction error subband signal and spatial high-frequency prediction error subband signal by spatially subband dividing the prediction error signal; and

band signal spatial dividing means for

generating a spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal by spatially subband dividing the spatial low-frequency subband signal.

70. A moving picture encoding device according to claim 69, characterized in that said motion compensation predicting means, prediction error signal spatial dividing means, and band signal spatial dividing means are performed on the moving picture signal, and the processes of said motion compensation predicting means, prediction error signal spatial dividing means, and band signal spatial dividing means are recurrently repeated by replacing the spatial low-frequency intra-subband signal obtained after said band signal spatial dividing means with the spatial low-frequency subband signal.

71. A moving picture encoding device for performing a three-dimensional subband dividing process which subband divides a moving picture signal in both a temporal direction and spatial direction, characterized in that the three-dimensional subband dividing process comprises at least:

motion detecting means for obtaining motion information by detecting an interframe motion of the moving picture signal;

temporal subband dividing means for obtaining a temporal low-frequency subband signal and temporal

high-frequency subband signal by motion compensating the moving picture signal in accordance with the motion information, and temporally subband dividing the motion compensated moving picture signal;

temporal high-frequency subband spatial dividing means for generating a temporal high-frequency/spatial low-frequency subband signal and temporal high-frequency/spatial high-frequency subband signal by spatially subband dividing the temporal high-frequency subband signal;

temporal low-frequency subband spatial dividing means for generating a temporal low-frequency/spatial low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal by spatially subband dividing the temporal low-frequency subband signal; and

band signal spatial dividing means for generating a spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal by spatially subband dividing the moving picture signal.

72. A moving picture encoding device according to claim 71, characterized in that said temporal subband dividing means, temporal high-frequency subband spatial dividing means, temporal low-frequency subband spatial dividing means, and band signal spatial diving means are performed on the moving picture signal, and the processes of said temporal subband dividing

means, temporal high-frequency subband spatial dividing means, temporal low-frequency subband spatial dividing means, and band signal spatial dividing means are recurrently repeated by replacing the spatial low-frequency intra-subband signal obtained after said band signal spatial dividing means with the moving picture signal.

73. A moving picture encoding device for performing a three-dimensional subband dividing process which subband divides a moving picture signal in both a temporal direction and spatial direction, characterized in that the three-dimensional subband dividing process comprises at least:

motion detecting means for obtaining motion information by detecting an interframe motion of the moving picture signal;

temporal subband dividing means for obtaining a temporal low-frequency subband signal and temporal high-frequency subband signal by motion compensating, in accordance with the motion information, a spatial low-frequency subband signal obtained by spatially subband dividing the moving picture signal, and temporally subband dividing the motion compensated spatial low-frequency subband signal;

temporal high-frequency subband spatial dividing means for generating a temporal high-frequency/spatial low-frequency subband signal and

temporal high-frequency/spatial high-frequency subband signal by spatially subband dividing the temporal high-frequency subband signal;

temporal low-frequency subband spatial dividing means for generating a temporal low-frequency/spatial low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal by spatially subband dividing the temporal low-frequency subband signal; and

band signal spatial dividing means for generating a spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal by spatially subband dividing the spatial low-frequency subband signal.

74. A moving picture encoding device according to claim 73, characterized in that said temporal subband dividing means, temporal high-frequency subband spatial dividing means, temporal low-frequency subband spatial dividing means, and band signal spatial dividing means are performed on the moving picture signal, and the processes of said temporal subband dividing means, temporal high-frequency subband spatial dividing means, temporal low-frequency subband spatial dividing means, and band signal spatial dividing means are recurrently repeated by replacing the spatial low-frequency intra-subband signal obtained after said band signal spatial dividing means with the spatial

low-frequency subband signal.

75. A moving picture encoding device characterized by comprising at least:

means for generating a temporal high-frequency/spatial low-frequency signal by referring to a temporal high-frequency signal, temporal low-frequency signal, and temporal low-frequency/spatial high-frequency signal;

means for generating a second temporal low-frequency signal by referring to the temporal low-frequency signal and temporal low-frequency/spatial high-frequency signal;

means for generating a second temporal high-frequency signal by using the temporal high-frequency/spatial low-frequency signal and a temporal high-frequency/spatial high-frequency signal; and

means for combining the second temporal low-frequency signal and second temporal high-frequency signal.

76. A moving picture decoding device characterized by comprising at least:

first means for generating a spatial low-frequency prediction error subband signal by referring to a prediction error signal, spatial low-frequency intra-subband signal, and spatial high-frequency intra-subband signal;

second means for obtaining a second prediction error signal by spatially subband combining the spatial low-frequency prediction error subband signal and spatial high-frequency prediction error subband signal;

third means for obtaining an intra-band signal by spatially subband combining the spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal; and

fourth means for combining the intra-band signal and second prediction error signal.

77. A moving picture decoding device according to claim 76, characterized in that the processes of said first means, said second means, and said third means are recurrently repeated by replacing the second prediction error signal with the prediction error signal, and the intra-band signal with the spatial low-frequency intra-subband signal.

78. A moving picture decoding device characterized by comprising at least:

first means for generating a spatial low-frequency prediction error subband signal by referring to a prediction error signal, spatial low-frequency intra-subband signal, and spatial high-frequency intra-subband signal;

second means for obtaining a second prediction error signal by spatially subband combining the spatial low-frequency prediction error subband signal and

spatial high-frequency prediction error subband signal;

third means for obtaining an intra-band signal by spatially subband combining the spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal; and

fourth means for adding the second prediction error signal to the intra-band signal by motion compensation prediction.

79. A moving picture decoding device according to claim 78, characterized in that the processes of said first means, said second means, and said third means are recurrently repeated by replacing the second prediction error signal with the prediction error signal, and the intra-band signal with the spatial low-frequency intra-subband signal.

80. A moving picture decoding device characterized by comprising at least:

first means for generating a spatial low-frequency prediction error subband signal by referring to at least one or a combination of a spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal, and a prediction error signal;

second means for obtaining a second prediction error signal by spatially subband combining the spatial low-frequency prediction error subband signal and spatial high-frequency prediction error subband signal;

third means for obtaining an intra-band signal by spatially subband combining the spatial low-frequency intra-subband signal and spatial high-frequency intra-subband signal; and

fourth means for combining the intra-band signal and second prediction error signal.

81. A moving picture decoding device according to claim 80, characterized in that the processes of said first means, said second means, and said third means are recurrently repeated by replacing the second prediction error signal with the prediction error signal, and the intra-band signal with the spatial low-frequency intra-subband signal.

82. A moving picture decoding device characterized by comprising at least:

first means for generating a temporal high-frequency/spatial low-frequency subband signal by referring to a temporal high-frequency subband signal, temporal low-frequency subband signal, and temporal low-frequency/spatial high-frequency subband signal;

second means for obtaining a second temporal high-frequency subband signal by spatially subband combining the temporal high-frequency/spatial low-frequency subband signal and a temporal high-frequency/spatial high-frequency subband signal;

third means for obtaining a second temporal low-frequency subband signal by spatially subband

combining the temporal low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal; and

fourth means for combining the second temporal low-frequency subband signal and second temporal high-frequency subband signal.

83. A moving picture decoding device according to claim 82, characterized in that the processes of said first means, said second means, and said third means are recurrently repeated by replacing the second temporal high-frequency subband signal with the temporal high-frequency subband signal, and the second temporal low-frequency subband signal with the temporal low-frequency subband signal.

84. A moving picture decoding device characterized by comprising at least:

first means for generating a temporal high-frequency/spatial low-frequency subband signal by referring to at least one or a combination of a temporal low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal, and a temporal high-frequency subband signal;

second means for obtaining a second temporal high-frequency subband signal by spatially subband combining the temporal high-frequency/spatial low-frequency subband signal and a temporal high-frequency/spatial high-frequency subband signal;

third means for obtaining a second temporal low-frequency subband signal by spatially subband combining the temporal low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal; and

fourth means for combining the second temporal low-frequency subband signal and second temporal high-frequency subband signal.

85. A moving picture decoding device according to claim 84, characterized in that the processes of said first means, said second means, and said third means are recurrently repeated by replacing the second temporal high-frequency subband signal with the temporal high-frequency subband signal, and the second temporal low-frequency subband signal with the temporal low-frequency subband signal.

86. A moving picture decoding device characterized by comprising at least:

first means for generating a temporal low-frequency/spatial low-frequency subband signal by referring to a spatial low-frequency intra-subband signal and temporal high-frequency/spatial high-frequency subband signal;

second means for generating a temporal high-frequency/spatial low-frequency subband signal by referring to a temporal high-frequency subband signal, the temporal low-frequency/spatial low-frequency subband

signal, and a temporal low-frequency/spatial high-frequency subband signal;

third means for obtaining a second temporal high-frequency subband signal by spatially subband combining the temporal high-frequency/spatial low-frequency subband signal and temporal high-frequency/spatial high-frequency subband signal;

fourth means for obtaining a second temporal low-frequency subband signal by spatially subband combining the temporal low-frequency/spatial low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal; and

fifth means for combining the second temporal low-frequency subband signal and second temporal high-frequency subband signal.

87. A moving picture decoding device according to claim 86, characterized in that the processes of said first means, said second means, said third means, and said fourth means are recurrently repeated by replacing the second temporal high-frequency subband signal with the temporal high-frequency subband signal, and the second temporal low-frequency subband signal with the spatial low-frequency intra-subband signal.

88. A moving picture decoding device characterized by comprising at least:

first means for generating a temporal

low-frequency/spatial low-frequency subband signal by referring to a spatial low-frequency intra-subband signal and temporal high-frequency/spatial high-frequency subband signal;

second means for generating a temporal high-frequency/spatial low-frequency subband signal by referring to at least one or a combination of the temporal low-frequency/spatial low-frequency subband signal and a temporal low-frequency/spatial high-frequency subband signal, and a temporal high-frequency subband signal;

third means for obtaining a second temporal high-frequency subband signal by spatially subband combining the temporal high-frequency/spatial low-frequency subband signal and temporal high-frequency/spatial high-frequency subband signal;

fourth means for obtaining a second temporal low-frequency subband signal by spatially subband combining the temporal low-frequency/spatial low-frequency subband signal and temporal low-frequency/spatial high-frequency subband signal; and

fifth means for combining the second temporal low-frequency subband signal and second temporal high-frequency subband signal.

89. A moving picture decoding device according to claim 88, characterized in that the processes of said first means, said second means, said

third means, and said fourth means are recurrently repeated by replacing the second temporal high-frequency subband signal with the temporal high-frequency subband signal, and the second temporal low-frequency subband signal with the spatial low-frequency intra-subband signal.

90. A moving picture encoding device characterized by comprising at least:

means for obtaining a time filtering signal by filtering a moving picture signal in a temporal direction;

means for obtaining a time filtering lower hierarchy signal and time filtering upper hierarchy signal by spatially hierarchically dividing the time filtering signal;

means for obtaining an upper hierarchy moving picture signal by spatially hierarchically dividing the moving picture signal;

means for obtaining an upper hierarchy time filtering signal by filtering the upper hierarchy moving picture signal in the temporal direction; and

means for encoding the time filtering lower hierarchy signal and upper hierarchy time filtering signal.

91. A moving picture encoding device according to claim 90, characterized by further comprising means for replacing the time filtering upper

hierarchy signal with the upper hierarchy time filtering signal.

92. A moving picture decoding device characterized by comprising at least:

means for decoding a time filtering lower hierarchy signal and upper hierarchy time filtering signal;

means for obtaining a time filtering upper hierarchy signal by filtering the upper hierarchy time filtering signal in a temporal direction;

means for obtaining a time filtering signal by spatially hierarchically combining the time filtering lower hierarchy signal and time filtering upper hierarchy signal; and

means for obtaining a moving picture signal by filtering the time filtering signal in the temporal direction.

93. A moving picture decoding device according to claim 92, characterized by further comprising means for correcting, by referring to a signal of a frame different from a frame of the time filtering upper hierarchy signal, the time filtering upper hierarchy signal to a time filtering upper hierarchy signal which belongs to an upper hierarchy obtained by hierarchical division after temporal-direction filtering is performed at a decoding resolution.